

1     **CLAIMS**

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3     1.    Valve assembly for use with a dispensing  
4     apparatus, the valve assembly comprising:

5           a valve;

6           a lever arranged to open the valve to dispense  
7     product; and

8           variable spacer means arranged to limit the  
9     travel of the lever by a variable amount according  
10    to the relative position of the lever and the  
11    variable spacer means.

12

13    2.    Valve assembly according to claim 1 wherein the  
14    valve is a tilt valve including a valve stem, and  
15    the lever is coupled to the valve stem.

16

17    3.    Valve assembly according to claim 1 or 2  
18    wherein the variable spacer means is adapted to  
19    prevent travel of the lever in a particular relative  
20    position of the lever and the variable spacer means.

21

22    4.    Valve assembly according to claim 1 further  
23    including a nozzle, the lever being integral with  
24    the nozzle.

25

26    5.    Valve assembly according to any preceding claim  
27    wherein the variable spacer means includes a  
28    plurality of spacer portions of differing thickness,  
29    each spacer portion being arranged to limit the  
30    travel of the lever by a predetermined amount.

31

1     6.     Valve assembly according to any of claims 1 to  
2     4 wherein the variable spacer means comprises a cam  
3     surface arranged to limit the travel of the lever by  
4     an amount which varies with the relative position of  
5     the lever and the variable spacer means.

6

7     7.     Valve assembly according to claim 5 wherein the  
8     variable spacer means comprises a collar which in  
9     use engages with a container with which the valve  
10    assembly is used.

11

12    8.     Valve assembly according to claim 5 or 7  
13    wherein the spacer portions comprise a plurality of  
14    portions of the collar of different height adapted  
15    to contact the lever when the lever is at the limit  
16    of its travel.

17

18    9.     Valve assembly according to claim 8 wherein the  
19    lever is rotatably mounted relative to the valve so  
20    that in use the lever is rotated to select a  
21    required limit of travel of the lever and hence a  
22    required flow setting of the valve.

23

24    10.    Valve assembly according to claim 7 wherein the  
25    collar is adapted to press fit on the rolled flange  
26    of a standard pressurised container.

27

28    11.    Valve assembly according to claim 5 wherein the  
29    variable spacer means comprises a collar rotatably  
30    mounted around the valve stem beneath the lever.

31

1 12. Valve assembly according to claim 11 wherein  
2 the spacer portions comprise a plurality of portions  
3 of the collar of different thickness adapted to  
4 space the lever from the container with which the  
5 valve assembly is used when the lever is at the  
6 limit of its travel.

7  
8 13. Valve assembly according to claim 7 or 11  
9 wherein the collar is in the form of a clip having a  
10 radial slot.

11  
12 14. Valve assembly according to claim 4 wherein the  
13 nozzle serves as the lever.

14  
15 15. Valve assembly according to claim 4 wherein the  
16 lever is provided between the nozzle and the valve  
17 stem and is substantially axially aligned with the  
18 valve stem.

19  
20 16. Valve assembly according to claim 14 or 15  
21 wherein the variable spacer means is arranged to  
22 limit the lateral travel of the nozzle or lever by a  
23 variable amount according to the direction in which  
24 the nozzle or lever is displaced.

25  
26 17. Valve assembly according to claim 16 wherein  
27 the spacer means comprises a collar which in use  
28 engages with a container with which the valve  
29 assembly is used.

30  
31 18. Valve assembly according to claim 17 wherein  
32 the spacer portions comprise a plurality of recessed

1 portions of the collar of different depths adapted  
2 to contact the nozzle or lever when the nozzle or  
3 lever is displaced towards said recessed portion.  
4

5 19. Valve assembly according to claim 17 wherein  
6 the variable spacer means comprises a cam surface of  
7 the collar adapted to contact the nozzle or lever  
8 when the nozzle or lever is displaced laterally and  
9 provide a limit of travel, the limit of travel  
10 varying with the direction in which the nozzle or  
11 lever is displaced.  
12

13 20. Dispensing apparatus comprising a container and  
14 a valve assembly according to any preceding claim.  
15

16 21. Valve assembly according to claim 1 further  
17 comprising an actuator which co-operates with a  
18 bearing portion of the lever such that operation of  
19 the lever from a primed position to a dispensing  
20 position causes movement of the actuator to open the  
21 valve;  
22

23 wherein the variable spacer means comprises an  
24 adjustable spacing means provided on the lever which  
25 can be adjusted to limit the travel of the lever.  
26

27 22. Valve assembly according to claim 21 wherein  
28 the adjustable spacing means comprises an abutting  
29 member which is movable to a selected one of a  
30 plurality of positions.  
31

32 23. Valve assembly according to claim 22 wherein  
the abutting member is adapted to space the lever

1 from a container with which the valve assembly is  
2 used at the limit of travel of the lever.

3

4 24. Valve assembly according to claim 22 or 23  
5 wherein the abutting member is arranged such that  
6 for each of the plurality of positions of the  
7 abutting member there is a corresponding position of  
8 the lever at the limit of travel of the lever.

9

10 25. Valve assembly according to any of claims 21 to  
11 24 wherein the lever includes a handle which in use  
12 extends along a portion of the side of a container  
13 with which the valve assembly is used.

14

15 26. Valve assembly according to claim 25 wherein  
16 the adjustable spacing means is provided at the  
17 handle.

18

19 27. Valve assembly according to claim 25 or 26  
20 wherein the lever is substantially L-shaped, the  
21 bearing portion is provided on a first leg of the L-  
22 shape and the handle is provided on the other,  
23 second leg of the L-shape.

24

25 28. Dispensing apparatus comprising a container, a  
26 nozzle and a valve assembly arranged between the  
27 container and the nozzle, the valve assembly  
28 comprising:

29 a valve;

30 a lever having a bearing portion; and

31 an actuator which co-operates with the bearing  
32 portion of the lever such that operation of the

1 lever from a primed position to a dispensing  
2 position causes movement of the actuator to open the  
3 valve;  
4 wherein the lever comprises an adjustable  
5 spacing means which can be adjusted to limit the  
6 travel of the lever.

7  
8 29. Dispensing apparatus according to claim 28  
9 wherein the adjustable spacing means comprises an  
10 abutting member which is movable to a selected one  
11 of a plurality of positions.

12  
13 30. Dispensing apparatus according to claim 29  
14 wherein the abutting member moves by sliding and is  
15 adapted to engage resiliently in each of the  
16 plurality of positions.